REMARKS

I. Introduction

In response to the December 29, 2008 Office Action, Applicant has amended claim 2 to further clarify the present disclosure. Support for the amendment to claim 2 may be found, for example, on page 3, line 7 and page 8, line 24-page 9, line 4 of the specification. Claims 9-14 have been cancelled as being redundant to claims 3-8. No new matter has been added.

For the reasons set forth below, Applicant respectfully submits that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 2, 4, 6, 10 and 12 Under 35 U.S.C. § 103

Claims 2, 4, 6, 10 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kessler (USP No. 4,406,590) in view of Turlay (USP No. 2,838,941). Applicant respectfully submits that Kessler and Turlay fail to render the pending claims obvious for at least the following reasons.

With regard to the present invention, claim 2 recites, in-part, a hermetic compressor comprising...a compression element comprising: a shaft having an eccentric shaft body and a main shaft body; a piston moving reciprocally in the compression chamber; a balance weight formed on the shaft, wherein the balance weight is formed in such a shape that the distance between the portion of the outer circumference of the balance weight closest to the piston and the piston is substantially constant during the entire period in the rotation of the balance weight in which the outer circumference of the balance weight and piston are at their closest proximity to each other in order to obtain the balance weight with a greater inertial force, supposing axial center of the main shaft body to be origin, x-coordinate and y-coordinate of the portion of the

outer circumference of the balance weight closest to the piston are substantially expressed as follows:

$$x = [s\cdot\cos(360° - \theta) + L\cdot\cos\{\sin^{-1}(s\cdot\sin(360° - \theta)/L)\} + C - \alpha]\cdot\cos(360° - \theta)$$

$$y = [s\cdot\cos(360° - \theta) + L\cdot\cos\{\sin^{-1}(s\cdot\sin(360° - \theta)/L)\} + C - \alpha]\cdot\sin(360° - \theta)$$

where s: distance between axial center of main shaft body and axial center of eccentric shaft body,

L : pitch length of connecting means,

C : skirt length of piston,

α : distance between outer circumference of balance weight and piston, and

θ : rotation angle of eccentric shaft body.

It is alleged that Kessler teaches a balance weight the shape of which meets the criteria for the above equation. The rationale for this allegation is cited in the Office Action on page 4 which states "since Kessler teaches the same configuration and the elements as discussed have the same spatial relationship as the instant application, a value for each of the variables listed in the x and y coordinate expressions can be determined. Therefore, the x and y coordinates of the outer circumference of the balance weight of Kessler 234 can be expressed by the equations as discussed."

Applicant respectfully objects to this argument. As has been stated previously, nowhere in Turlay or Kessler is there any teaching or suggestion of the relationship between the parameters s, L, C, α, and θ as disclosed in the equation of claim 2. Rather, it has only been suggested that Kessler teaches a counterweight having the same configuration as that of the

present disclosure. However, as stated previously, there is no teaching or suggestion in Kessler that the balance weight of Kessler teaches the same configuration and the elements as discussed in claim 2. This is because, the prior art does not teach or suggest the equation disclosed in claim 2. Without utilizing this equation, there is no possibility of creating the balance weight with the specifications cited in the disclosure.

In fact, the Examiner appears to misunderstand the significance of the equation recited in claim 2 and its effectiveness for reducing the distance between the portion of the outer circumference of the balance weight closest to the piston and the piston itself. The present disclosure shows how, by using the equation, the parameters s, L, C, α, and θ may be tailored to produce a very small distance between the portion of the outer circumference of the balance weight closest to the piston and the piston. For example, claim 3 of the present disclosure recites a distance α of 2 mm or less. In contrast, Turlay does not disclose any distance at all. Moreover, the invention of Turlay could not achieve this distance without the use of the equation relating the parameters of claim 2. Thus, since Turlay fails to teach the relationship between the parameters disclosed in claim 2, Turlay also fails to disclose the same configuration of the balance weight of claim 2.

Furthermore, the purpose behind the statements of Turlay referred to in the Office Action in col. 2, lines 24-26 regarding the clearance of the counterweight and the pistons is to decrease the weight of the counterweight 53 by providing the greatest possible radius of gyration for the center of mass about the axis of rotation of the crankshaft 12 (see, Turlay, col. 3, lines 21-27). In contrast, the present disclosure is directed toward increasing the weight of the balance weight to obtain a balance weight with a greater inertial force. As such, since the objectives of Turlay are

different than that of the present disclosure, it cannot be said that the configurations will be the same either.

Therefore, as is well known, in order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. As Kessler and Turlay, at a minimum, fail to teach or suggest a hermetic compressor comprising…a compression element comprising: a shaft having an eccentric shaft body and a main shaft body; a piston moving reciprocally in the compression chamber; a balance weight formed on the shaft, wherein the balance weight is formed in such a shape that the distance between the portion of the outer circumference of the balance weight closest to the piston and the piston is substantially constant during the entire period in the rotation of the balance weight in which the outer circumference of the balance weight and piston are at their closest proximity to each other in order to obtain the balance weight with a greater inertial force, and supposing axial center of the main shaft body to be origin, x-coordinate and y-coordinate of the portion of the outer circumference of the balance weight closest to the piston are substantially expressed in the formula recited in claim 2, it is submitted that Kessler and Turlay, alone or in combination, do not render claim 2, or any pending claims dependent thereon, obvious.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 2 is patentable for the reasons

set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

Moreover, claim 6 of the present disclosure recites a subsidiary shaft body. For example, Fig. 1 shows a subsidiary shaft body 113. As is described in the specification on page 7, lines 9-11, because the bearing is supported at two sides, high efficiency is realized without unsteady rotation. In contrast, none of the cited prior art teaches or suggests the subsidiary shaft body of claim 6. As such, Applicant submits that claim 6 is allowable over the cited prior art for this reason as well.

IV. Conclusion

Having responded to all open issues set forth in the Office Action, it is respectfully submitted that all claims are in condition for allowance.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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